TRANS TERRITORY PIPELINE (TTP)

a

ALCAN BLACKTIP JV

Notice of Intent

1 September 2003

Revision 0
For Issue

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1 INTRODUCTION

This Notice of Intent (NOI) has been prepared for submission to the Northern Territory Government by the Trans Territory Pipeline Project (TTP) as the formal notification of the project and in accordance with the *Northern Territory Environmental Assessment Act 1982 and Administrative Procedures 1984.*

The purpose of this document is to present an outline description of the proposed project and provide a summary of the potentially key environmental issues pertaining to the project so that a determination can be made by the Northern Territory office of the Environment and Heritage on the appropriate level of environmental assessment.

1.1 Proponent

The Trans Territory Pipeline Project (TTP) is a Joint Study for and on behalf of the Blacktip Joint Venture (ENI Australia Ltd and Woodside Energy Limited and operated by Woodside) and Alcan South Pacific Pty Ltd (Alcan).

The project proponent is Alcan Gove Pty Ltd ABN (76 000 453 663), or nominee, on behalf of the TTP. The Alcan Gove refinery was constructed in the late 1960's, and production of bauxite began in 1972. The plant is a highly sophisticated alumina refinery. The Gove facility is one of the world's leading bauxite mining and alumina processing operations.

The need for the Wadeye to Gove pipeline occurs because Alcan want to convert the energy source of their alumina plant from fuel oil to natural gas. This will create a cleaner, more environmentally friendly operation and will lead to further capital investment in the Northern Territory, potentially creating employment and training for people across the Northern Territory.

Woodside is the designated operator of the Blacktip gas field, contained in petroleum permit WA-279-P, which is the source of gas for the Alcan facility at Gove. The Blacktip Joint Venture (BJV) is a joint development between Woodside (53.85% share) and ENI Australia (43.15% share)

The key contacts for the environmental approval process for this project is:

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2 DESCRIPTION OF THE PROPOSAL

2.1 General Description

TTP proposes to construct a high pressure gas pipeline, approximately 950 km in length, between Wadeye and Gove Figure 1 details the proposed pipeline corridor and a number of alternative segments of pipeline corridor currently being evaluated. The pipeline corridor may also cater for a condensate export pipeline for condensate export to potential markets in the Northern Territory and beyond.

The gas pipeline will transport treated gas from the Blacktip field to supply fuel to Alcan's alumina plant in Gove. The pipeline will consist of a buried high tensile steel pipe located in a corridor of up to 30 metres wide. Above ground facilities at intervals along the pipeline route will include a compressor station, meter station, scraper stations, mainline valves and other ancillary facilities. In the event of a condensate pipeline being layed in the gas pipeline trench there will be a need for road tanker loading facilities located at appropriate intervals along the pipeline route.

The TTP pipeline is intrinsically linked to the Blacktip offshore Field development and the proposed gasification plans for Alcan's Alumina plant at Gove. This development may also provide an alternative gas supply infrastructure to other potential gas customers in the Northern Territory. The pipeline will be constructed and operated in accordance with the requirements of Australian Standard AS2885.

The proposed gas pipeline will be designed, welded, tested, operated, maintained and decommissioned in accordance with relevant legislation, license conditions and Australian Standards.

Construction of a pipeline typically involves a number of sequential activities, collectively named a ‘spread,’ which are outlined below; the action may comprise more than one ‘spread’. Construction is undertaken within a cleared corridor, typically 30m wide.

Temporary Facilities - A range of temporary facilities are required during the pipeline construction. These include work areas for equipment and pipe delivery and storage, worker accommodation camps, offices and borrow pits to source additional fill material (if required). The location of the temporary facilities is based on logistical requirements and the objectives for the pipeline route selection.

Access - During construction, access tracks will be required to access areas such as the pipeline corridor, work areas and campsites. Existing roads, tracks and disturbed areas will be utilised as far as practicable to minimise disturbance to the surrounding areas. The selection of access track routes will be based on the objectives for the pipeline route selection.

Clearing - The pipeline corridor is cleared of heavy vegetation; root stock is left in the ground where practicable to stabilise the area and reduce erosion. Some vegetation will be stockpiled for respreading as part of the restoration process. Breaks will be left in stockpiled vegetation to allow continued access for fence lines, tracks, stock and drainage lines. Harvestable timber and crops may be removed prior to clearing. Gates will be installed where fence lines are required to be

breached. Large mature trees, particularly at river crossings, will be preserved wherever practicable to do so.

Grading - The ROW is levelled to the required gradient using graders, backhoes and bulldozers. Topsoil is removed, where required, and stockpiled separately for reuse during rehabilitation.

Trenching – A trench will be dug in which the pipe will lie. This trench will be prepared using excavators, trenching machines, rock saws or by drilling and blasting as required by the nature of the ground. The distance of trench will be left open, controlled and kept to a practicable minimum. Wherever the trench is easily accessed by the public reserve, it will be clearly marked by bunting and hazard lights. Breaks in the trench are left to facilitate stock and wildlife crossing, and methods will be adopted to prevent fauna entrapment. Typical top of pipe depths in all areas are 750 mm; road crossings 1200 mm; and rivers 1500 mm.

Stringing - Pipe will be transported to site on trucks. The pipe is laid out adjacent to the trench, bent as required and set on skids which protect the pipe coating from damage.

Line-Up and Welding - Once the pipe is strung, a line-up crew will position the pipe using side boom tractors and line-up clamps. The pipes are then welded together.

Radiography - Each weld is subjected to an inspection to test for compliance to specification, thus ensuring the integrity of each weld.

Lowering In and Backfilling – Graded material is placed in the bottom of the trench and the pipe is lifted off the skids and lowered into the trench using side-boom tractors. The pipeline is then covered with more graded material. This material may be screened excavation material or it may imported. The trench is then filled by returning the remaining excavated material.

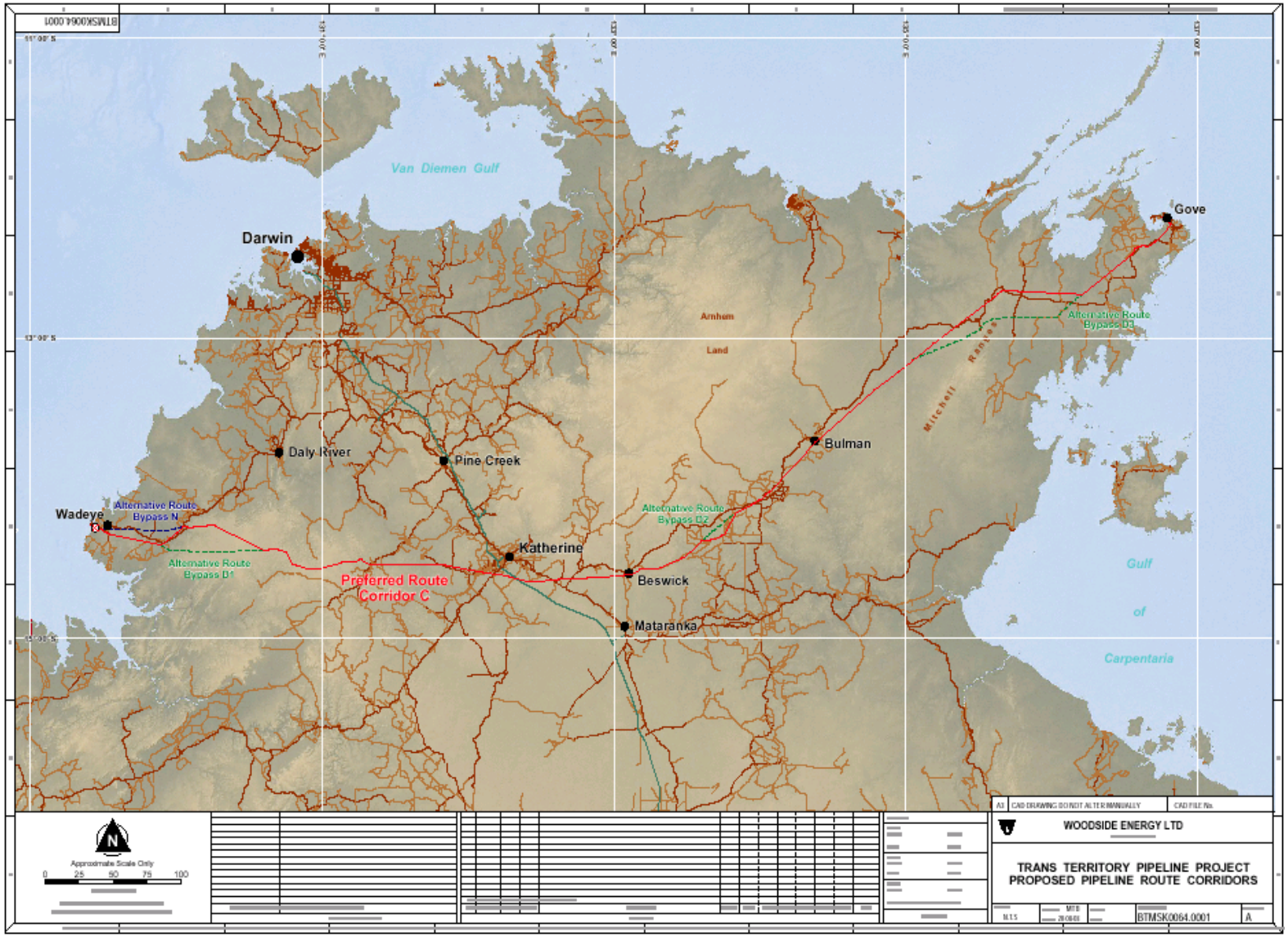
Testing - The pipeline will be hydrostatically tested for strength and potential leaks by being filled with water and pressurised to a pressure greater than its normal operating pressure.

Crossings - Several different methods are used when crossing rivers, roads, and major infrastructure corridors. The method used will be dependent on environmental factors and geotechnical constraints, which will be identified during the environmental studies. Typical methods used include open trenching, boring and directional drilling.

Clean up and Rehabilitation - Clean up and rehabilitation measures will be applied to the pipeline corridor, access tracks and camp sites in consultation with the relevant land holder/owner. Generally clean up and rehabilitation will involve removal of foreign material (construction material and waste), surface contouring, respreading topsoil, respreading vegetation and reseeding. In certain areas a low 'formed camber' of material may be allowed to remain over the trench line to allow for possible subsidence. The formed camber is broken at regular intervals to prevent disruption to surface waters.

Given that the pipeline will be underground, land users are able to resume previous land use activities on top of the pipeline provided that this does not include excavation activities.

Figure 1: Proposed Pipeline Corridor Routes



2.2 Project Location

The pipeline will commence near Wadeye which lies near the coast of the Bonaparte Gulf. The pipeline then traverses in a generally easterly direction passing some 12 km to the South of Katherine. At a point near Beswick the pipeline turns to the north east toward the Mitchell ranges, at which point the route corridor is aligned to the east. The final approach to Gove is to the north east and then follows the Gove peninsula. Along certain sections of the route alternative corridors are proposed. The points which define the centreline of the study corridors are shown in Table 1 and illustrated on Figure 1. Route C represents the preferred route at this stage with routes D1, D2, D3 and N being considered as alternatives to Route C and therefore the focus of this approval process is on Route C at this stage.

Table 1: **Boundaries of the Proposed Pipeline Study Corridor**

Preferred Route Corridor C Latitude (Decimal degrees)	**Longitude** (Decimal degrees)	**Latitude**			**Longitude**		
14.24263	129.41204	14°	14'	33.482"	129°	24'	43.351"
14.24528	129.44820	14°	14'	43.012"	129°	26'	53.516"
14.27056	129.48139	14°	16'	14.000"	129°	28'	53.000"
14.29167	129.51389	14°	17'	30.000"	129°	30'	50.000"
14.30389	129.52972	14°	18'	14.000"	129°	31'	47.000"
14.37833	129.89500	14°	22'	42.000"	129°	53'	42.000"
14.28833	130.00917	14°	17'	18.000"	130°	0'	33.000"
14.25660	130.04626	14°	15'	23.763"	130°	2'	46.524"
14.26054	130.08659	14°	15'	37.957"	130°	5'	11.724"
14.25720	130.17392	14°	15'	25.906"	130°	10'	26.102"
14.24306	130.25000	14°	14'	35.000"	130°	15'	0.000"
14.41100	130.59997	14°	24'	39.598"	130°	35'	59.892"
14.40833	130.69583	14°	24'	30.000"	130°	41'	45.000"
14.42361	130.75556	14°	25'	25.000"	130°	45'	20.000"
14.50694	130.79722	14°	30'	25.000"	130°	47'	50.000"
14.53611	130.90278	14°	32'	10.000"	130°	54'	10.000"
14.53333	130.98750	14°	31'	60.000"	130°	59'	15.000"
14.48667	131.16667	14°	29'	12.000"	131°	10'	0.000"
14.48889	131.22500	14°	29'	20.000"	131°	13'	30.000"
14.47222	131.26111	14°	28'	20.000"	131°	15'	40.000"
14.50833	131.32917	14°	30'	30.000"	131°	19'	45.000"
14.50556	131.80278	14°	30'	20.000"	131°	48'	10.000"
14.56060	132.10024	14°	33'	38.149"	132°	6'	0.853"
14.58250	132.26000	14°	34'	57.000"	132°	15'	36.000"
14.61840	132.39218	14°	37'	6.235"	132°	23'	31.865"
14.62297	132.46017	14°	37'	22.708"	132°	27'	36.605"
14.60737	132.61863	14°	36'	26.530"	132°	37'	7.059"

Latitude (Decimal degrees)	Longitude (Decimal degrees)	Latitude			Longitude		
14.59444	132.90278	14°	35'	40.000"	132°	54'	10.000"
14.57500	133.12083	14°	34'	30.000"	133°	7'	15.000"
14.54028	133.17917	14°	32'	25.000"	133°	10'	45.000"
14.54167	133.25833	14°	32'	30.000"	133°	15'	30.000"
14.53500	133.30000	14°	32'	6.000"	133°	18'	0.000"
14.45833	133.48333	14°	27'	30.000"	133°	28'	60.000"
14.35181	133.60140	14°	21'	6.511"	133°	36'	5.039"
14.34045	133.68648	14°	20'	25.608"	133°	41'	11.345"
14.31074	133.75404	14°	18'	38.678"	133°	45'	14.540"
14.16667	133.83333	14°	10'	0.000"	133°	49'	60.000"
14.10167	133.96111	14°	6'	6.000"	133°	57'	40.000"
14.09722	133.96111	14°	5'	50.000"	133°	57'	40.000"
14.07222	134.00833	14°	4'	20.000"	134°	0'	30.000"
14.03500	134.05000	14°	2'	6.000"	134°	3'	0.000"
14.02222	134.06833	14°	1'	20.000"	134°	4'	6.000"
13.69028	134.38333	13°	41'	25.000"	134°	22'	60.000"
13.34333	134.78694	13°	20'	36.000"	134°	47'	13.000"
13.21667	134.95833	13°	13'	0.000"	134°	57'	30.000"
13.14028	135.05833	13°	8'	25.000"	135°	3'	30.000"
13.03611	135.19028	13°	2'	10.000"	135°	11'	25.000"
12.71944	135.61472	12°	43'	10.000"	135°	36'	53.000"
12.70556	135.62750	12°	42'	20.000"	135°	37'	39.000"
12.68361	135.66694	12°	41'	1.000"	135°	40'	1.000"
12.70902	136.21029	12°	42'	32.480"	136°	12'	37.040"
12.43500	136.55833	12°	26'	6.000"	136°	33'	30.000"
12.40278	136.57000	12°	24'	10.000"	136°	34'	12.000"
12.39222	136.60500	12°	23'	32.000"	136°	36'	18.000"
12.38472	136.62333	12°	23'	5.000"	136°	37'	24.000"
12.39028	136.66111	12°	23'	25.000"	136°	39'	40.000"
12.35833	136.70833	12°	21'	30.000"	136°	42'	30.000"
12.24444	136.82000	12°	14'	40.000"	136°	49'	12.000"
12.19583	136.75833	12°	11'	45.000"	136°	45'	30.000"
Alternative Route BYPASS D D1							
14.37833	129.89500	14°	22'	42.000"	129°	53'	42.000"
14.41111	129.95000	14°	24'	40.000"	129°	56'	60.000"
14.42778	130.21861	14°	25'	40.000"	130°	13'	7.000"
14.41100	130.59997	14°	24'	39.598"	130°	35'	59.892"

Latitude (Decimal degrees)	Longitude (Decimal degrees)	Latitude			Longitude		
Alternative Route D2							
14.35181	133.60140	14°	21'	6.511"	133°	36'	5.039"
14.28056	133.68333	14°	16'	50.000"	133°	40'	60.000"
14.16667	133.83333	14°	10'	0.000"	133°	49'	60.000"
Alternative Route D3							
13.14028	135.05833	13°	8'	25.000"	135°	3'	30.000"
12.98778	135.42917	12°	59'	16.000"	135°	25'	45.000"
12.94583	135.50167	12°	56'	45.000"	135°	30'	6.000"
12.90556	135.53750	12°	54'	20.000"	135°	32'	15.000"
12.86833	135.60000	12°	52'	6.000"	135°	35'	60.000"
12.85833	136.04667	12°	51'	30.000"	136°	2'	48.000"
12.82083	136.07222	12°	49'	15.000"	136°	4'	20.000"
12.70902	136.21029	12°	42'	32.480"	136°	12'	37.040"
Alternative Route BYPASS N							
14.27056	129.48139	14°	16'	14.000"	129°	28'	53.000"
14.28214	129.88267	14°	16'	55.690"	129°	52'	57.600"
14.28699	129.91228	14°	17'	13.170"	129°	54'	44.220"
14.25660	130.04626	14°	15'	23.763"	130°	2'	46.524"

2.3 Project Timeframe

The key project milestones are as follows:

Activity	
Commercial and Market Development	2003 - 2005
Land Management and Approvals	2003 - 2004
Engineering	2003 - 2005
Commence Construction	2005 - 2006
Commissioning	2006
First Gas Delivered to Gove	2007

2.4 Legal Framework

The proposed development will be undertaken in accordance with a range of Territory and Commonwealth legislation pertaining to planning, environmental management and Aboriginal affairs. The primary State, Territory and commonwealth legislation required for project approvals are:

- Environmental Protection and Biodiversity Conservation Act 1999
- Northern Environmental Assessment Act
- Petroleum Submerged Lands Act 1967
- Petroleum Submerged Lands (Management of Environment) Regulations 1999
- Aboriginal Land Rights (Northern Territory) Act 1976 - negotiation pursuant to s19 (4A). - (ALRA).
- Native Title Act (Commonwealth) 1993 - compulsory acquisition of, consultations about, or negotiation over impacts on native title rights.
- Lands Acquisition Act (NT) - access for surveys and compulsory acquisition of all privately held interests in land - (LAANT)
- Energy Pipelines Act (NT) - access for surveys and pipeline licence. - (EPA)
- Sacred Sites Act (NT) 1978 - Authority Certificate to ensure indemnity against inadvertent disturbance of sacred sites. - (SSA).
- Heritage Conservation Act (NT) - Ministerial permission to disturb sites of Aboriginal, Macassan or European heritage. - (HCA)

3 DESCRIPTION OF THE PROJECT AREA AND THE AFFECTED AREA

The proposed pipeline corridor is illustrated in Figure 1. There are no World Heritage properties, RAMSAR wetlands, Commonwealth marine areas or Commonwealth Land within the proposed pipeline corridor.

Species listed under the Threatened Species and Migratory provisions of the EPBC Act or classified as Threatened in the NT under provisions of the TPWC Act that occur, or are likely to occur, along the route proposed for the Trans Territory Pipeline are presented in Table 2.

This species list has been developed from the following sources:

- **NT Fauna Atlas records within 5km of the proposed pipeline route (NT Fauna Atlas).**
  Species identified from the Fauna Atlas have previously been observed within 5km of the proposed pipeline route.

- **NT Herbarium records within 5km of the proposed pipeline route,**
  Species identified from the Herbarium records have previously been observed within 5km of the proposed pipeline route.

- **EPBC web based search facility (EPBC search).**
  This database is very generalised; therefore, the species identified in the search have been included in this report only if their known distribution covers the proposed pipeline route.
  For species that are not classified as 'threatened' in the NT but which are listed under provisions of the EPBC Act their classification in the NT has been provided in the table.

  The species detailed in Table have been identified from published sources and are not meant to be an exhaustive list of potential species in the area. It is possible therefore that additional species will be identified during the survey work to be undertaken as part of the approvals process. Where additional protected species are identified their occurrence will be reported to the appropriate authorities and mitigation measures will be adopted which ensure no significant impact occurs to the species.

Table 2: Species Listed under the EPBC Act or Under the TPWC Act That Occur Or Are Likely To Occur along the Pipeline Corridor

FAMILY	*TAXON*	COMMON NAME	EPBC ACT STATUS	STATUS IN NT	DATA SOURCE
BIRDS					
Accipitridae	*Accipiter cirrhocephalus*	Collared Sparrowhawk	Migratory	Least concerned	NT Fauna Atlas
Accipitridae	*Accipiter fasciatus*	Brown Goshawk	Migratory	Least concerned	NT Fauna Atlas
Accipitridae	*Accipiter novaehollandiae*	Grey Goshawk	Migratory	Least concerned	NT Fauna Atlas
Accipitridae	*Aquila audax*	Wedge-tailed Eagle	Migratory	Least concerned	NT Fauna Atlas
Accipitridae	*Elanus axillaris*	Black-shouldered Kite	Migratory	Least concerned	NT Fauna Atlas
Accipitridae	*Erythrotriorchis radiatus*	Red Goshawk	Vulnerable Migratory	Vulnerable	Field observation EPBC Search NT Fauna Atlas
Accipitridae	*Haliaeetus leucogaster*	White-bellied Sea-eagle	Migratory	Least concerned	NT Fauna Atlas EPBC Search
Accipitridae	*Haliastur indus*	Brahminy Kite	Migratory	Least concerned	NT Fauna Atlas
Accipitridae	*Haliastur sphenurus*	Whistling Kite	Migratory	Least concerned	NT Fauna Atlas
Accipitridae	*Lophoictinia isura*	Square-tailed Kite	Migratory	Near Threatened	NT Fauna Atlas
Accipitridae	*Milvus migrans*	Black Kite	Migratory	Least concerned	NT Fauna Atlas
Accipitridae	*Pandion haliaetus*	Osprey	Migratory	Least concerned	NT Fauna Atlas
Anatidae	*Anas gracilis*	Grey Teal	Migratory	Least concerned	NT Fauna Atlas
Anatidae	*Anas superciliosa*	Pacific Black Duck	Migratory	Least concerned	NT Fauna Atlas
Anatidae	*Dendrocygna arcuata*	Wandering Whistling-Duck	Migratory	Least concerned	NT Fauna Atlas

Anatidae	*Dendrocygna eytoni*	Plumed Whistling-Duck	Migratory	Least concerned	NT Fauna Atlas
Anatidae	*Nettapus pulchellus*	Green Pygmy-Goose	Migratory	Least concerned	NT Fauna Atlas
Anatidae	*Tadorna radjah*	Radjah Shelduck	Migratory	Least concerned	NT Fauna Atlas
Ardeidae	*Egretta sacra*	Eastern Reef Egret	Migratory	Least concerned	NT Fauna Atlas
Campephagidae	*Coracina tenuirostris melvillensis*	Melville Cicadabird	Migratory		EPBC Search
Charadriidae	*Charadrius veredus*	Oriental Plover	Migratory	Least concerned	EPBC Search
Charadriidae	*Elseyornis melanops*	Black-fronted Dotterel	Migratory	Least concerned	NT Fauna Atlas
Charadriidae	*Erythrogonys cinctus*	Red-kneed Dotterel	Migratory	Least concerned	NT Fauna Atlas
Columbidae	*Geophaps smithii smithii*	Partridge Pigeon	Vulnerable	Near-threatened	EPBC Search
Dicruridae	*Rhipidura rufifrons*	Rufous Fantail	Migratory	Least concerned	EPBC Search
Falconidae	*Falco berigora*	Brown Falcon	Migratory	Least concerned	NT Fauna Atlas
Falconidae	*Falco cenchroides*	Nankeen Kestrel	Migratory	Least concerned	NT Fauna Atlas
Falconidae	*Falco longipennis*	Australian Hobby	Migratory	Least concerned	NT Fauna Atlas
Falconidae	*Falco peregrinus*	Peregrine Falcon	Migratory	Least concerned	NT Fauna Atlas
Glareolidae	*Glareola maldivarum*	Oriental Pratincole	Migratory	Least concerned	EPBC Search
Gruidae	*Grus rubicunda*	Brolga	Migratory	Least concerned	NT Fauna Atlas
Hirundinidae	*Hirundo rustica*	Barn Swallow	Migratory	Data deficient	EPBC Search
Laridae	*Sterna albifrons*	Little Tern	Migratory	Least concerned	NT Fauna Atlas
Laridae	*Sterna hirundo*	Common Tern	Migratory	Least concerned	NT Fauna Atlas
Laridae	*Sterna sumatrana*	Black-naped Tern	Migratory	Least concerned	NT Fauna Atlas
Meropidae	*Merops ornatus*	Rainbow Bee-eater	Migratory	Least concerned	NT Fauna Atlas
Pachycephalidae	*Falcunculus frontatus whitei*	Crested Shrike-tit	Vulnerable Migratory	Data deficient	EPBC Search
Passeridae	*Erythrura gouldiae*	Gouldian Finch	Endangered Migratory	Vulnerable	EPBC Search
Petroicidae	*Poecilodryas superciliosa cerviniventris*	Derby White-browed Robin	Migratory	Not evaluated	EPBC Search
Recurvirostridae	*Himantopus himantopus*	Black-winged Stilt	Migratory	Least concerned	NT Fauna Atlas
Rostratulidae	*Rostratula benghalensis*	Painted Snipe	Migratory	Vulnerable	EPBC Search
Scolopacidae	*Actitis hypoleucos*	Common Sandpiper	Migratory	Least concerned	NT Fauna Atlas
Scolopacidae	*Calidris ferruginea*	Curlew Sandpiper	Migratory	Least concerned	NT Fauna Atlas

Scolopacidae	*Calidris ruficollis*	Red-necked Stint	Migratory	Least concerned	NT Fauna Atlas
Scolopacidae	*Calidris tenuirostris*	Great Knot	Migratory	Least concerned	EPBC Search
Scolopacidae	*Limicola falcinellus*	Broad-billed Sandpiper	Migratory	Data deficient	NT Fauna Atlas
Scolopacidae	*Limosa limosa*	Black-tailed Godwit	Migratory	Least concerned	EPBC Search
Scolopacidae	*Numenius madagascariensis*	Eastern Curlew	Migratory	Least concerned	NT Fauna Atlas
Scolopacidae	*Numenius minutus*	Little Curlew	Migratory	Least concerned	EPBC Search
Scolopacidae	*Numenius phaeopus*	Whimbrel	Migratory	Least concerned	NT Fauna Atlas
Scolopacidae	*Tringa nebularia*	Common Greenshank	Migratory	Least concerned	NT Fauna Atlas
Sylviidae	*Cisticola exilis*	Golden-headed Cisticola	Migratory	Least concerned	NT Fauna Atlas
Threskiornithidae	*Plegadis falcinellus*	Glossy Ibis	Migratory	Least concerned	NT Fauna Atlas
REPTILES					
Crocodylidae	*Crocodylus johnstonii*	Freshwater Crocodile	Migratory	Least concerned	EPBC Search
Crocodylidae	*Crocodylus porosus*	Saltwater Crocodile	Migratory	Least concerned	EPBC Search
PLANTS					
Melastomataceae	*Pternandra coerulescens*		-	Vulnerable	NT Herbarium

3.1 Key Natural features of the Project Area

The proposed pipeline alignment lies within the Northern Savanna and Wet Tropical Zones of the Northern territory and traverses country dominated by woodlands of Eucalyptus\Corymbia, with large areas of seasonally inundated woodlands dominated by *Melaleuca viridiflora* in areas of poorly drained soil. Rainforest patches occur close to the pipeline corridor and these will not be directly impacted by the pipeline. Numerous riparian rainforests are traversed by the pipeline alignment and may provide suitable habitat for flora species of conservation significance.

The major topographical features intersected by the proposed pipeline are the Sturt Plateau, The Gulf Fall Uplands, Central Arnhem (including the Mitchell Ranges) and Arnhem coast and Macadam Ranges.

The key bioregions associated with the proposed project area are the Daly Basin, Sturt Plateau, Gulf Fall and Uplands, Central Arnhem and Arnhem Coast.

The Daly Basin bioregion has areas of permanent freshwater, which provide a major breeding and dry season habitat for freshwater turtles, fishes and freshwater crocodile. The main vegetation is woodland in (narrow) periform arrangements, with the surrounding areas

supporting low open-woodland, low woodland, woodland and open-forest over grassland. The Sturt Plateau is dominated by pastoralism, with a low percentage of the area reserved for conservation, It has been identified that the bioregion does provide a refuge for some mammal species, which have been in decline in their habitats in Central Australia e.g. Bilby.

The Gulf Falls and Upland bioregion is dominated by pastoralism, with substantial areas of Aboriginal freehold. The area also includes areas of mining and mining potential and the Limmen Gate Park.

The Arnhem bioregion contains a number of areas of high conservation value that have been avoided by the proposed pipeline. Water flows into the area from the Katherine River, which results in some areas of permanent inundation that provide a major dry season refuge for aquatic fauna including fish, freshwater crocodiles and turtles. The key vegetation consists of open forest over tall shrubland (pandanus) in narrow, discontinuous arrangements. The surrounding areas support low open woodland over open-hummock grassland and woodland over grassland.

Numerous rivers and creeks, most of which were flowing during the late dry season when a field survey was conducted, are intersected by the proposed pipeline alignment. Some of the crossings are characterised by a single, well defined channel with a narrow fringe of riparian vegetation. Others consist of numerous braided channels with dense riparian vegetation.

Isolated swamp pockets, characterised by areas of open water and sedges fringed by *Melaleuca* trees, occur along a 60km stretch of the proposed pipeline alignment. The area in which these swamps occur is part of the Goyder River catchment that is listed on the Register of the National Estate for its Aboriginal values. The pipeline route passes 30km south of the Arafura Swamp, a site listed in the Register of the National Estate for its natural values. The Arafura Swamp is a broad area of seasonally inundated grassland and paperbark forest and is an important waterbird habitat.

The majority of the areas traversed by the pipeline alignment are relatively weed free, however weed infestations do occur and are concentrated through cattle stations, and at river and creek crossings. A number of weed species have been identified, many of which are declared weeds under the NT *Weed Management Act (2001).* A detailed Weed Management Plan will be prepared and will be implemented as part of the Construction Management Plan for the project.

Feral animals recorded within the proposed alignment include the house mouse, black rat and water buffalo. Donkeys, cane toads, horses, cattle and water buffalo were reported along the proposed alignment during October 2001 field surveys.

The pipeline corridor runs to the north of the Flora River Nature Park, to the south of the Daly River Conservation Area, Douglas/Daly Esplanade Area, Douglas Hot Springs Nature Park, Kakadu National Park, and Nitmiluk (Katherine George) National Park.

3.2 Landuse and Land Tenure

The existing land tenure along the proposed alignment comprises primarily Aboriginal Land Trust land, Pastoral Lease and NT Crown lease.

The proposed route has a range of land uses, including pastoral, agricultural, horticultural and traditional Aboriginal uses. It is not anticipated that there will be any significant change of land use as a result of the pipeline.

4 POTENTIAL IMPACTS

4.1 Natural Environment

The proposed pipeline will not impact on World Heritage Property, Ramsar wetland, commonwealth marine area or commonwealth land. The proposed pipeline corridor crosses the Arafura Wetlands and Surrounds National Estate in the eastern section of the pipeline corridor.

Construction and operation of the proposed pipeline should not have any significant impacts on any of the listed threatened species or migratory species or their habitat. It is considered that all impacts can either be avoided or successfully mitigated with the adoption of appropriate management strategies.

The key impacts in relation to pipeline projects include impacts from vegetation clearance and issues of erosion control and restoration related to the disturbance of the soil across the pipeline corridor Disturbances to riparian zones will be mitigated through the adoption of appropriate river watercourse crossing techniques.

The clearing of vegetation due to pipeline projects also increases the potential for the invasion of feral and weed species, in the interim, until the area can be fully restored. Pipelines have the potential to fragment habitats and disturb the natural transport corridors of fauna. Selection of the pipeline centreline will take into account the need to minimise the removal of mature trees. While the corridor will be re-vegetated through a combination of natural re-vegetation and active restoration, mature trees will not be allowed to re-establish within 5 m of the pipeline centreline. Tree roots can adversely impact the corrosion protection systems for pipelines; the 5m buffer ensures pipeline integrity is maintained.

A detailed Environment Management Plan (EMP) will be prepared and implemented which will detail all safeguard environmental management measures to be put in place during the construction and operation of the pipeline.

Listed threatened species and ecological communities may be subject to temporary disturbance during the construction phase. Where possible route selection will avoid these species and communities and appropriate mitigation measures will be put in place to ensure no significant impact on these species and communities occur. Where necessary similar mitigation measures will be put in place to minimise impacts on migratory species that may occur along the pipeline corridor.

4.2 Cultural Heritage

Areas containing valuable cultural heritage sites are avoided in the pipeline route selection process, where possible. It is the TTP's view that consultation with Aboriginal people should be an integral part of the planning process in order to take advice on routing the pipeline. Consequently, as the NLC will be responsible for this in respect of Traditional Owners and potentially affected Aboriginal communities, the TTP seeks to work cooperatively with the NLC to support their activities in this regard. Management measures will be detailed in a Cultural Heritage Management Plan prepared for construction and operation of the pipeline.

4.3 Social and Economic Impact

It is expected that the construction workforce will be approximately 300 people per mainline spread, and the pipeline is planned to be constructed over one dry season. It is anticipated this will require utilisation of three or four spreads for construction of the pipeline.

It is intended that preference will be given to employment of locally-based people in construction. In addition, a small number of jobs will be associated with ongoing pipeline operation and monitoring activities.

Pipeline construction causes temporary interruptions to land use. Landowners will be notified of the work schedule, nature of the work, location of the work and access requirements prior to work commencing. Activities such as recreation, grazing and agriculture can generally resume over the corridor area following pipeline construction.
Separate Social Impact Assessment and Economic Benefits Analysis studies will be prepared for inclusion within the environmental approval processes and for the development of plans for the construction and operation phases of the Project.

5 REFERENCES

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